

SIO 139. Current Research in Marine Biology (2)

Provides an introduction to current research topics and developments in marine biology and biological oceanography. Faculty members and graduate students from Scripps Institution of Oceanography will offer perspectives in these areas. Practice in scientific research and communication skills. P/NP grades only. **Prerequisites:** upper-division standing or consent of instructor.

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Office hours by arrangement.

Writing Center: The Teaching and Learning Commons provides writing support for students. Since this class includes frequent writing assignments consider getting their support for your work. <https://commons.ucsd.edu/academic-support/writing/for-undergraduates.html>

Cheating: The University imposes strict guidelines on academic integrity (<https://senate.ucsd.edu/Operating-Procedures/Senate-Manual/Appendices/2>) and these will be enforced. Anyone caught cheating will receive an F for the course and will be reported to the Academic Integrity coordinator.

Schedule

1. W Jan 9: Types of Writing: lab notebooks, lab reports, scientific papers, white papers, reviews. Why do we write? Discussion of abstracts and paper summaries.
2. W Jan 16 : SIO Collections tour. Meet at Collections location in lobby of Vaughn Hall. Note if you have already visited the collections you can alternatively watch a new video about the collections: Oddities: Scripps' Fascinating Collection of Ocean Life <https://ucsd.tv/search-details.aspx?showID=33732>
3. W Jan 23 Peer review of paper summary. Discussion of Figures, Figure legends. Begin R.
4. W Jan 30 Analyzing data with R. Dr. Eric Archer, NMFS. PLEASE BRING YOUR LAPTOP IF POSSIBLE.
5. W Feb 6 What else did they write? Reference managers. Amy Butros, UCSD.
6. W Feb 13 3-4 Short graduate student talks.
7. W Feb 20 Prof. Anela Choy
8. W Feb 27 Prof. Phil Hastings
9. W Mar 6 Prof. Deidre Lyons
10. W Mar 13 Science Communication. Dr. Jennifer Brandon, Birch Aquarium.

Paper choices from the SIO Collections:

Goldstein MC, Rosenberg M, and LN Cheng, 2012. Increased oceanic microplastic enhances oviposition in an endemic pelagic insect. *Biology Letters*, 8(5): 817-820.

Bargu S, Silver MW, Ohman MD, Benitez-Nelson CR, and DL Garrison, 2012. Mystery behind Hitchcock's birds. *Nature Geoscience*, 5(1): 2-3.

Hastings PA, Craig MT, Erisman BE, Hyde JR, and H J Walker, 2014. Fishes of Marine Protected Areas Near La Jolla, California. *Bull. Southern California Acad. Sci.* 113(3): 200–231. ^{[[L]]}_{SEP}

Rouse GW, Wilson NG, Worsaae K, and RC Vrijenhoek, 2015. A Dwarf Male Reversal in Bone-Eating Worms. *Current Biology*, 25 (2): 236-241.

Goffredi SK et al. 2017 Hydrothermal vent fields discovered in the southern Gulf of California clarify role of habitat in augmenting regional diversity. *Proc. R. Soc. B* 284: 20170817.

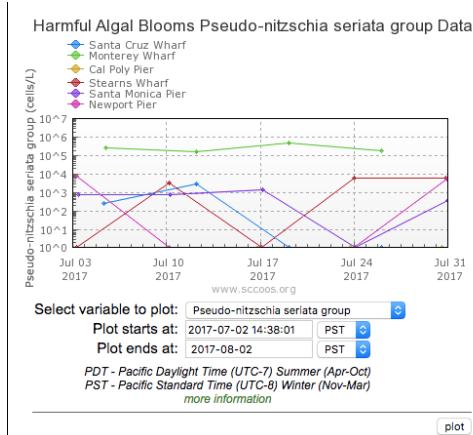
Other papers:

Scaling from individual plankton to marine ecosystems: Phytoplankton dynamics in the Southern California Bight indicate a complex mixture of transport and biology. 2016. Bialonski, Stephan; Caron, David A.; Schloen, Julia; et al. *JOURNAL OF PLANKTON RESEARCH* Volume: 38 Issue: 4 Pages: 1077-1091.

Papers by Dede Lyons, Anela Choy, Phil Hastings. TBD

Homework Assignments

1. Assigned Jan 9 Homework: Obtain data for chlorophyll or a harmful alga from SIO pier at <http://sccoos.org/data/habs/index.php>. Go to the bottom of the page, pick an alga, pick a data range, and take a screen shot of the resulting plot. Try different starting dates to get enough data. Read paper by Bialonski et al (“Scaling from individual plankton to marine ecosystems: Phytoplankton dynamics in the Southern California Bight indicate a complex mixture of transport and biology”)for context. Write an imaginary abstract about your data from the SCCOOS website. Due Jan 16.



2. Assigned Jan 16. Homework: Read one paper from suggested SIO collections reading list. Write a summary of the paper as discussed in class. See resources below. Show word count on summary. Due Jan 23.

3. Assigned Jan 23. Homework: Revise paper summary based on peer comments. Guidelines provided in class. Due Jan 30. Download R and RStudio. R: <https://www.r-project.org>
RStudio: <https://www.rstudio.com>
View introduction to R online <http://www.cyclismo.org/tutorial/R/index.html>. **And read the first chapter on input.**

4. Assigned Jan 30. Homework: Create a graph using R. Write a Figure Legend. Due Feb 6.

5. Assigned Feb 6. Homework: Use 1 reference from the SIO Collections below. Find 9 more related references that cited them or each other and create a reference library in Endnote online. Keep the papers relatively similar in theme as you will write a literature summary next week. Submit a page with the references formatted as in Author-Date AND in Numbered styles. Due Feb 13.

6. Assigned Feb 13. Homework: Using your 10 papers above, write a literature summary with references. Create a references cited list using your reference manager at the bottom of your literature summary and have citations in the paragraphs of your literature summary. Format in Author-Date style. Due Feb 20.

7. Assigned Feb 20. Homework: Read an assigned paper by the guest speaker. Write a summary. Due Feb 27. Show word count on summary.

8. Assigned Feb 27 Read an assigned paper by the guest speaker. Write a summary. Due March 6. Show word count on summary.

9. Assigned March 6. Write an approximately 1 page or so reflection on one area of marine science research you find interesting and why. Provide citations in the text and a reference list at the end of at least 5 publications in this area that you find interesting. Due March 13.

When possible, we will have peer-reading/commenting of your exercises in class. **Thus, turn in assignments as hard copies with your name on all pages AND at TritonEd as a Turnitin assignment.** All papers should demonstrate mastery of grammar, punctuation, spelling and syntax expected of college level students. If you need writing assistance, please seek help from Student Support Services and the Writing Center. All papers are to be word-processed, proofread, and solely the work of the author.

Resources

<https://www.wikihow.com/Summarize-a-Journal-Article>